



Cambridge Analytical Associates

1106 Commonwealth Avenue / Boston, Massachusetts 02215 / (617) 232-2207

US EPA RECORDS CENTER REGION 5



487481

FINAL REPORT

GSX Corporation
60 State Street
Boston, MA 02109
Attn: Dr. Neal Drawas

CUSTOMER PROJECT: St. Louis Incinerator

REPORT NUMBER: 85-096

PREPARED BY: David L. Fiest
Keith A. Hausknecht

DATE PREPARED: February 15, 1985
(Revised February 22, 1985)



Cambridge Analytical Associates

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1. INTRODUCTION

This report summarizes results of chemical analyses performed on samples received by CAA on February 4, 1985. GSX work request, GSX Chain-of-custody Forms and CAA Laboratory Forms appear in Figures 1, 2 and 3, respectively. Analytical methods employed for these analyses are described in Section 2 and results are presented in Section 3. The last section contains certifications supporting the analytical results.

2. ANALYTICAL METHODS

Analytical methods utilized for sample analysis are summarized in Table 1.

3. RESULTS

Results of analyses are presented in Tables 2, 3, 4, and 5. Quality control data are summarized in Tables 6 and 7.

Table 1A. Summary of Inorganic Analytical Methods

Constituent	Method Reference	Method Description
Sample Preparation (EP toxicity)	Method 1310 (1)	EP test
Instrumental Analysis (EP Test)		
Arsenic (As)	Method 206.2 (2)	GFAAS
Barium (Ba)	Method 200.7 (2)	ICP
Cadmium (Cd)	Method 213.1 (2)	FAAS
Chromium (Cr)	Method 218.1 (2)	FAAS
Lead (Pb)	Method 239.1 (2)	FAAS
Mercury (Hg)	Method 245.5 (2)	Cold-vapor AAS
Selenium (Se)	Method 270.2 (2)	GFAAS
Silver (Ag)	Method 272.1 (2)	FAAS
Copper (Cu)	Method 200.7 (2)	ICP
Nickel (Ni)	Method 200.7 (2)	ICP
Zinc (Zn)	Method 200.7 (2)	ICP
Paint Filter Liquids Test	Method 9095 (1)	Free liquid filtration
Cyanide	Method 335.2 (2)	Distillation, colorimetric
Acidity	Method 305.1 (2)	Titrimetric
Alkalinity	Method 310.1 (2)	Titrimetric
pH	USDA Method (3)	Dilution with water, electrometric

(1)U.S. EPA. 1982. Test Methods for Evaluating Solid Waste-Physical/Chemical Methods. Second Edition. SW-846. Office of Solid Waste, U.S. EPA, Washington, D.C.

(2)U.S. EPA. 1979. Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL, Cincinnati, Ohio.

(3)U.S. Department of Agriculture. 1972. Soil Survey Laboratory Methods and Procedures for Collecting Soil Samples. Soil Survey Investigations Report No. 1. U.S. DA, Soil Conservation Service, Washington, DC 20402. U.S. GPO 0107-0298.

GFAAS - Graphite furnace atomic absorption spectrophotometry

ICP - Inductively coupled argon plasma emission spectroscopy

FAAS - Flame atomic absorption spectrometry

Table 1B. Summary of Organic Analytical Methods

Constituent	Method Reference	Method Description
Semivolatile Organics-Acid/Base/Neutral Extractables	Method 8270 (1)	Solvent extraction, capillary chromatography/mass spectrometry
Pesticides/PCBs	Method 8080 (1)	Solvent extraction, gas chromatography/electron capture detection

(1)U.S. EPA. 1982. Test Methods for Evaluating Solid Waste-Physical/Chemical Methods. Second Edition. SW-846. Office of Solid Waste, U.S. EPA, Washington, D.C.

Table 2. Results of EP Toxicity Analyses

Constituent	Maximum Contaminant Level (MCL) ^a	Client ID: CAA ID:	Sample 1 8500345	Sample 2 8500346	Sample 3/4 8500347
Metals (mg/l)					
Arsenic (As)	5.0		<0.005	<0.005	<0.005
Barium (Ba)	100.		0.08	0.08	0.10
Cadmium (Cd)	1.0		<0.05	<0.05	<0.05
Chromium (Cr)	5.0		<0.025	<0.025	<0.025
Lead (Pb)	5.0		0.33	0.19	<0.05
Mercury (Hg)	0.2		<0.0005	<0.0005	<0.0005
Selenium (Se)	1.0		<0.005	<0.005	<0.005
Silver (Ag)	5.0		<0.01	<0.01	<0.01
Copper (Cu)	100. ^b		0.04	0.03	<0.025
Nickel (Ni)	None		<0.05	<0.05	<0.05
Zinc (Zn)	500. ^b		<0.05	<0.05	<0.05

^aEPA (1982) SW846.

^bThis value is calculated as 100 times the level specified by the National Secondary Drinking Water Regulations.

Table 3. Results of Bulk Analyses

Client: GSX Corp.
 Project Number: 85-096

Client ID	CAA ID	Cyanide (ug/g dry weight)	Alkalinity (ug/g dry weight)	Acidity (ug/g dry weight)	% Moisture	Free Liquid	pH
1	8500345	1.1	-	-	37	None	-
2	8500346	2.9	-	-	39	None	-
3/4 composite	8500347	2.9	-	-	53	None	-
11	8500348	1.8	190	NDA	19	None	7.8
23	8500349	2.2	470	ND ^a	24	b	10.7

- Not analyzed.

^aSample contained no titratable acidity.

bInsufficient sample for free liquid test.

Table 2 (cont'd). Results of EP Toxicity Analyses

Constituent	Maximum Contaminant Level (MCL) ^a	Client ID: CAA ID:	Sample 11 8500348	Sample 23 8500349
Metals (mg/l)				
Arsenic (As)	5.0		<0.005	<0.005; <0.005 ^c
Barium (Ba)	100.		0.09	<0.05; <0.05 ^c
Cadmium (Cd)	1.0		<0.05	<0.05; <0.05 ^c
Chromium (Cr)	5.0		<0.025	<0.025; <0.025 ^c
Lead (Pb)	5.0		0.07	0.07; <0.05 ^c
Mercury (Hg)	0.2		<0.0005	<0.0005; <0.0005 ^c
Selenium (Se)	1.0		<0.005	<0.005; <0.005 ^c
Silver (Ag)	5.0		<0.01	<0.01; <0.01 ^c
Copper (Cu)	100. ^b		<0.025	0.07; 0.05 ^c
Nickel (Ni)	None		<0.05	<0.05; <0.05 ^c
Zinc (Zn)	500 ^b		<0.05	<0.05; <0.05 ^c

^aEPA (1982) SW-846

^bThis value was calculated as 100 times the level specified by the National Secondary Drinking Water Regulations.

^cDuplicate analyses performed.

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Table 4. Concentrations of Acid/Base/Neutral Priority Pollutant Extractables (Method 8270)

Client: GSX
 CAA Project No.: 85-096

Date Samples Received: February 7, 1985
 Date Analysis Completed: February 13, 1985

Compound	Sample ID: CAA ID:	Concentration - ug/g dry weight (ppm) ¹		
		Sample 1 8500345	Sample 2 8500346	Sample 3/4 8500347
ACID COMPOUNDS				
(1) phenol			TR(3.6)	
(2) 2-chlorophenol				
(3) 2-nitrophenol				
(4) 2,4-dimethylphenol				
(5) 2,4-dichlorophenol				
(6) p-chloro-m-cresol				
(7) 2,4,6-trichlorophenol				
(8) 2,4-dinitrophenol				
(9) 4-nitrophenol				
(10) 4,6-dinitro-2-methylphenol				
(11) pentachlorophenol				
4-methyl phenol			TR(2.7)	
 Detection Limit				
		0.8	0.8	2.1
 BASE/NEUTRAL COMPOUNDS				
(1) N-nitrosodimethylamine				
(2) bis(2-chloroethyl)-ether				
(3) 1,3-dichlorobenzene				
(4) 1,4-dichlorobenzene				
(5) 1,2-dichlorobenzene				
(6) bis(2-chloroisopropyl)ether				
(7) N-nitrosodi-n-propylamine				
(8) hexachloroethane				
(9) nitrobenzene				
(10) isophorone				
(11) bis(2-chloroethoxy)methane				
(12) 1,2,4-trichlorobenzene				
(13) naphthalene		TR(0.8)		TR(2.8)
(14) hexachlorobutadiene				
(15) hexachlorocyclopentadiene				
(16) 2-chloronaphthalene				
(17) dimethyl phthalate				

CAMBRIDGE ANALYTICAL ASSOCIATES, INC.

Table 4 (cont'd). Concentration of Acid/Base/Neutral Priority Pollutant Extractables (Method 8270)

Client: GSX
 CAA Project No.: 85-096

Compound	Sample ID: CAA ID:	Concentration - ug/g dry weight (ppm) ¹		
		Sample 1 8500345	Sample 2 8500346	Sample 3/4 8500347
BASE/NEUTRAL COMPOUNDS (con't.)				
(18) acenaphthylene				
(19) acenaphthene				
(20) 2,4-dinitrotoluene				
(21) 2,6-dinitrotoluene				
(22) diethyl phthalate				
(23) 4-chlorophenyl phenyl ether				
(24) fluorene				
(25) N-nitrosodiphenylamine				
(26) 1,2-diphenylhydrazine				
(27) 4-bromophenyl phenyl ether				
(28) hexachlorobenzene				
(29) phenanthrene		TR(0.99)	TR(1.7)	
(30) anthracene				
(31) dl-n-butyl phthalate				
(32) fluoranthene				
(33) benzidine				
(34) pyrene				
(35) butyl benzyl phthalate				
(36) 3,3'-dichlorobenzidine				
(37) benzo(a)anthracene				
(38) bis(2-ethylhexyl)phthalate				
(39) chrysene				
(40) dl-n-octyl phthalate				
(41) benzo(b)fluoranthene				
(42) benzo(k)fluoranthene				
(43) benzo(a)pyrene				
(44) Indeno(1,2,3-c,d)pyrene				
(45) dibenzo(a,h)anthracene				
(46) benzo(ghi)perylene				
Detection Limit		0.8	0.8	2.1

¹ Concentrations less than the detection limit are left blank. Concentrations between 1 and 10 times the limit of detection are listed as trace levels (TR).

² Analyzed as azobenzene.

CAMBRIDGE ANALYTICAL ASSOCIATES, INC.

Table 5. Concentrations of Chlorinated Pesticides and PCBs (Method 608)

Client: GSX
 CAA Project No.: 85-096

Date Samples Received: February 7, 1985
 Date Analysis Completed: February 13, 1985

Compound	Sample ID: CAA ID:	Concentration - ug/gm (ppm) ¹		
		Sample 1 8500345	Sample 2 8500346	Sample 3/4 8500347
PESTICIDES AND PCBs				
(1) alpha-BHC				
(2) beta-BHC				
(3) delta-BHC				
(4) gamma-BHC (lindane)				
(5) heptachlor				
(6) aldrin				
(7) heptachlor epoxide				
(8) alpha-endosulfan				
(9) dieldrin				
(10) 4,4'-DDE				
(11) endrin				
(12) beta-endosulfan				
(13) 4,4'-DDD				
(14) endrin aldehyde				
(15) endosulfan sulfate				
(16) 4,4'-DDT				
(17) methoxychlor				
(18) chlordane		TR(0.05)	TR(0.06)	TR(0.40)
(19) Toxophene				
(20) PCB-1016				
(21) PCB-1221				
(22) PCB-1232				
(23) PCB-1242		TR(0.04)	TR(0.07)	TR(0.04)
(24) PCB-1248				
(25) PCB-1254		TR(0.07)	TR(0.06)	0.40
(26) PCB-1260				
 <hr/>				
Detection Limit		0.01	0.01	0.01

¹Concentrations less than the detection limit are left blank. Concentrations between 1 and 10 times the detection limit are listed as trace levels (TR). Detection limits for PCBs are ten times the nominal detection limit.

**Table 6. Quality Control Data - Spike Recoveries
and Reference Standards**

Constituent	Client ID	CAA ID	<u>Concentration (ppm)</u>		
			Theoretical Value	Observed Value	Recovery (%)
As	Check Standard (NBS 1643a)		0.076	0.072	95
	8500345	- Spike	0.050	0.050	100
	8500346	- Spike	0.050	0.048	96
	8500347	- Spike	0.050	0.047	94
	8500348	- Spike	0.050	0.047	94
	8500349	- Spike	0.050	0.046	92
	8500349 Duplicate - Spike		0.050	0.048	96
Ba	Check Standard (EPA 581 #2)		10.0	9.33	93
	8500345	- Spike	3.00	2.83	94
	8500346	- Spike	3.00	2.84	95
	8500347	- Spike	3.00	2.85	95
	8500348	- Spike	3.00	2.89	96
	8500349	- Spike	3.00	2.87	96
	8500399 Duplicate - Spike		3.00	2.86	95
Cd	Check Standard (EPA 475 #6)		0.07	0.07	100
	8500345	- Spike	0.500	0.506	101
	8500346	- Spike	0.500	0.504	101
	8500347	- Spike	0.500	0.492	98
	8500348	- Spike	0.500	0.496	98
	8500349	- Spike	0.500	0.506	101
	8500349 Duplicate - Spike		0.500	0.506	101
Cr	Check Standard (EPA 475 #6)		0.250	0.242	97
	8500345	- Spike	3.33	3.21	96
	8500346	- Spike	3.33	3.25	98
	8500347	- Spike	3.33	3.22	97
	8500348	- Spike	3.33	3.18	95
	8500349	- Spike	3.33	3.18	95
	8500349 Duplicate - Spike		3.33	3.17	95
Cu	Check Standard (EPA 475 #6)		0.350	0.345	95
	8500345	- Spike	3.33	3.28	98
	8500346	- Spike	3.33	3.27	98
	8500347	- Spike	3.33	3.31	99
	8500348	- Spike	3.33	3.29	99
	8500349	- Spike	3.33	3.30	99
	8500349 Duplicate - Spike		3.33	3.30	99

Table 6 (cont'd.) Quality Control Data - Spike Recoveries
and Reference Standards

Constituent	Client ID	CAA ID	Concentration (ppm)		
			Theoretical Value	Observed Value	Recovery (%)
Ni	Check Standard (EPA 475 #6)		0.300	0.287	96
	8500345 - Spike		3.00	2.98	99
	8500346 - Spike		3.00	3.00	100
	8500347 - Spike		3.00	3.00	100
	8500348 - Spike		3.00	2.84	95
	8500349 - Spike		3.00	2.93	98
	8500349 Duplicate - Spike		3.00	2.94	98
Pb	Check Standard (EPA 475 #6)		0.40	0.43	108
	8500345 - Spike		5.00	5.36	107
	8500346 - Spike		5.00	5.43	109
	8500347 - Spike		5.00	5.44	109
	8500348 - Spike		5.00	5.07	101
	8500349 - Spike		5.00	5.09	102
	8500349 Duplicate - Spike		5.00	5.44	109
Hg	Check Standard (Fisher)		0.0200	0.0199	100
	8500345 - Spike		0.0200	0.0227	114
	8500346 - Spike		0.0200	0.0220	110
	8500347 - Spike		0.0200	0.0219	110
	8500348 - Spike		0.0200	0.0218	109
	8500349 - Spike		0.0200	0.0214	107
	8500349 Duplicate - Spike		0.0200	0.0218	109
Se	Check Standard (NBS 1643a)		0.011	0.012	109
	8500345 - Spike		0.050	0.051	102
	8500346 - Spike		0.050	0.050	100
	8500347 - Spike		0.050	0.048	96
	8500348 - Spike		0.050	0.050	100
	8500349 - Spike		0.050	0.047	94
	8500349 Duplicate Spike		0.050	0.047	94
Ag	Check Standard (EPA ICAP-3)		1.00	0.928	93
	8500345 - Spike		2.83	2.45	87
	8500346 - Spike		2.83	2.39	84
	8500347 - Spike		2.83	2.41	85
	8500348 - Spike		2.83	2.36	83
	8500349 - Spike		2.83	2.43	86
	8500349 Duplicate Spike		2.83	2.35	83
Zn	Check Standard (EPA 475 #6)		0.400	0.424	106
	8500345 - Spike		3.33	3.34	100
	8500346 - Spike		3.33	3.40	102
	8500347 - Spike		3.33	3.32	106
	8500348 - Spike		3.33	3.22	97
	8500349 - Spike		3.33	3.31	93
	8500349 Duplicate - Spike		3.33	3.36	101

Table 3A. Results of Bulk Analyses

Client: GSX Corp.
Project Number: 85-096

Client ID	CAA ID	Cyanide (ug/g dry weight)	Alkalinity (ug/g dry weight)	Acidity (ug/g dry weight)	% Moisture	Free Liquid	pH
11	8500348	1.8	190	ND ^a	19	None	7.8

^aSample contained no titratable acidity.

Table 3B. Results of Bulk Analyses

Client: GSX Corp.
Project Number: 85-096

Client ID	CAA ID	Cyanide (ug/g dry weight)	Alkalinity (ug/g dry weight)	Acidity (ug/g dry weight)	% Moisture	Free Liquid	pH
23	8500349	2.2	470	ND ^a	24	b	10.7

^aSample contained no titratable acidity.

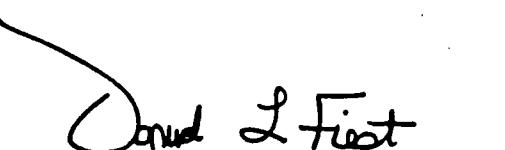
^bInsufficient sample for free liquid test.

4. QUALITY ASSURANCE DOCUMENTATION

Certification

This work has been checked for accuracy by the following staff personnel:

Director, Organic
Chemistry Laboratory



David L. Fiest

Director, Inorganic
Chemistry Laboratory



Keith A. Hausknecht



GSX Corporation
60 State Street
Boston, Massachusetts 02109
(617) 367-8300 Telex 94-0473

Figure 1

February 1, 1985

Cambridge Analytical Associates
1106 Commonwealth Avenue
Boston, MA 02215

Attn: Mr. David L. Fiest

Dear Dave:

Enclosed are samples of incinerator ash from two municipal incinerators in St. Louis, MO. I would like the following analysis performed as soon as possible.

<u>Sample(s) #</u>	<u>Analytical</u>
1/1A	EP Toxic Metals, CN, Cu, Ni, Zn, Priority Pollutants (Acid; Base/Neutral; Pesticide/PCB)
2/2A	EP Toxic Metals, CN, Cu, Ni, Zn, Priority Pollutants (Acid; Base/Neutral; Pesticide/PCB)
3/4/5/6	EP Toxic Metals, CN, Cu, Ni, Zn, Priority Pollutants (Acid; Base/Neutral; Pesticide/PCB)
11	EP Toxic Metals, CN, Cu, Ni, Zn, alkalinity, acidity
23	EP Toxic Metals, CN, Cu, Ni, Zn, alkalinity, acidity

If you have any questions, please contact me. Please call as soon as you have results.

Very truly yours,

Neal Drawas
Director, Environmental
Management

ND/jan
Enclosures



Figure 2A

CHAIN OF CUSTODY FORM

Facility: St. Louis Municipal San.
Address: 1500 N. 11th St.
St. Louis, MO

Sample Date: 1/31/85

SAMPLE IDENTIFICATION

Well	River/Stream	Surface Impoundment
Soil	Bottom Sediment	Pretreatment Facility
Outfall	Generation Point	Leachate Collection Sys.
Treatment Fac.	Lake/Ocean	Other
Liquid Waste	<input checked="" type="checkbox"/> Solid/Semi-Sol. Waste	

Sample Start Date: 1/31/85 Elapse Hours (composite)

SAMPLE BOTTLE CONTENTS

Sample #	Contents	Container Type	Condition
1	Emulsion	clear (pt)	
2	Emulsion	plastic	
3	Emulsion	glass (pt)	
4	Emulsion	plastic	

CHAIN OF CUSTODY CONDITIONS

1. Sample Taken By Name: Carol Draves Date: 1/31/85 Time: 1:30 pm
Signature: Carol Draves Seal #: _____

2. I have received these materials in good condition from the above person.
Name: Karen Anne McRiff Signature: Karen Anne McRiff
Date: 02/04/85 Time: _____ Remarks: _____ Seal #: _____

3. I have received these materials in good condition from the above person.
Name: _____ Signature: _____
Date: _____ Time: _____ Remarks: _____ Seal #: _____

4. I have received these materials in good condition from the above person.
Name: _____ Signature: _____
Date: _____ Time: _____ Remarks: _____ Seal #: _____

5. Container Sealed By (name): _____
Date: _____ Time: _____ Signature: _____
Seal #: _____ Condition: _____



Figure 2B

CHAIN OF CUSTODY FORM

Facility: St. Louis Incinerator Sample Date: 1/31/85
Address: South Plant
St. Louis, Mo.

***** SAMPLE IDENTIFICATION *****

Well	River/Stream	Surface Impoundment
Soil	Bottom Sediment	Pretreatment Facility
Outfall	Generation Point	Leachate Collection Sys.
Treatment Fac.	Lake/Ocean	Other
Liquid Waste	<input checked="" type="checkbox"/> Solid/Semi-Sol. Waste ash	

Sample Start Date: 01/31/85 Elapse Hours (composite)

***** SAMPLE BOTTLE CONTENTS *****

Sample #	Contents	Container Type	Condition
3	Incinerator ash	Cone (pt)	
4	Incinerator ash	Cone (pt)	
5	Incinerator ash	Cone	
6	Incinerator ash	Cone	

***** CHAIN OF CUSTODY CONDITIONS *****

1. Sample Taken By Name: Mark Ditchey Date: 1/31/85 Time: 2:00 p.m.
Signature: Daryl Anne McDiff Seal #: _____

2. I have received these materials in good condition from the above person.
Name: Karen Anne McDiff Signature: Daryl Anne McDiff
Date: 01/31/85 Time: _____ Remarks: _____ Seal #: _____

3. I have received these materials in good condition from the above person.
Name: _____ Signature: _____
Date: _____ Time: _____ Remarks: _____ Seal #: _____

4. I have received these materials in good condition from the above person.
Name: _____ Signature: _____
Date: _____ Time: _____ Remarks: _____ Seal #: _____

5. Container Sealed By (name): _____
Date: _____ Time: _____ Signature: _____
Seal #: _____ Condition: _____



Figure 2C

CHAIN OF CUSTODY FORM

Facility: St. Louis Municipal Incin. Sample Date: 1/3/85Address: North Plant
St. Louis, MO

***** SAMPLE IDENTIFICATION *****

Well	River/Stream	Surface Impoundment
Soil	Bottom Sediment	Pretreatment Facility
Outfall	Generation Point	Leachate Collection Sys.
Treatment Fac.	Lake/Ocean	Other
Liquid Waste	<input checked="" type="checkbox"/> Solid/Semi-Sol. Waste	

Sample Start Date: / / Elapse Hours (composite)

***** SAMPLE BOTTLE CONTENTS *****

Sample #	Contents	Container Type	Condition
11	Inorganic Ash	Glass	

***** CHAIN OF CUSTODY CONDITIONS *****

1. Sample Taken By Name: Unknown GSX Employee Date: 4-24-85 Time: 11:00AM
Signature: _____ Seal #: _____2. I have received these materials in good condition from the above person.
Name: Deborah Dumas Signature: D. Dumas
Date: 1/3/85 Time: 1:00PM Remarks: _____ Seal #: _____3. I have received these materials in good condition from the above person.
Name: Karen Anne Mc Cliff Signature: Karen Anne Mc Cliff
Date: 02/04/85 Time: _____ Remarks: _____ Seal #: _____4. I have received these materials in good condition from the above person.
Name: _____ Signature: _____
Date: _____ Time: _____ Remarks: _____ Seal #: _____5. Container Sealed By (name): _____
Date: _____ Time: _____ Signature: _____
Seal #: _____ Condition: _____

GSX

Figure 2D

CHAIN OF CUSTODY FORM

Facility: St Louis Municipal Treatment
Address: Sewer Plant
St. Louis MO.

Sample Date: 1/31/85

SAMPLE IDENTIFICATION

Well	River/Stream	Surface Impoundment
Soil	Bottom Sediment	Pretreatment Facility
Outfall	Generation Point	Leachate Collection Sys.
Treatment Fac.	Lake/Ocean	Other
Liquid Waste	<input checked="" type="checkbox"/> Solid/Semi-Sol. Waste	

Sample Start Date: 1/31/85 Elapse Hours (composite)

SAMPLE BOTTLE CONTENTS

Sample #	Contents	Container Type	Condition
23	<u>Irvin Ash</u>	<u>Glass</u>	

CHAIN OF CUSTODY CONDITIONS

1. Sample Taken By Name: GSX Employee Date: 1-24-85 Time: Sloopy
Signature: _____ Seal #: _____

2. I have received these materials in good condition from the above person.
Name: Neil Drans Signature: Neil Drans
Date: 1/31/85 Time: 1000 Remarks: _____ Seal #: _____

3. I have received these materials in good condition from the above person.
Name: Karen Anne McAll Signature: Karen Anne McAll
Date: 1/31/85 Time: 1000 Remarks: _____ Seal #: _____

4. I have received these materials in good condition from the above person.
Name: _____ Signature: _____
Date: _____ Time: _____ Remarks: _____ Seal #: _____

5. Container Sealed By (name): _____
Date: _____ Time: _____ Signature: _____
Seal #: _____ Condition: _____

Figure 3
SAMPLE TRANSFER FORM

Project Number:

85-096

Alt Project Number:
GSY

Date Received:

2/07

Date Due:

2/14

Base Order Number:

CAA Coordinator

JLF, PAH

INORGANICS

METALS

ORGANICS

LCMS

OUTSIDE

VFA

RUSH

NORMAL

ID	Sample ID	Matrix	Hazard Level	1G	4G	2N	4N	3F	4F	Lithology		Minerals		Oxides		Sulfides		Others		Comments		
										Pegmatites	Metavolcanic	Sulfides	Quartz	Pyrite	Pyrrhotite	Pyrite	Pyrrhotite	Cinnabar	Pyrite	Pyrrhotite		
SD0345	1	Inorg. ad.			X X				X			X			X X						EP extractive, EP metals	
0346	2				X X				X			X X			X X						+ Cu, Ni, Zn, small sandes	
0347	3/4 corp.				X X				X			X X			X X							
0348	11								X			X X			X X						{ alkalinity + acidity	
0349	23								X X			X X			X X							

Submitted by: (Signature)

Karen Anne McRiff

Date/Time

02/07/85

Received by: (Signature)

Copies are to be supplied to each laboratory conducting analyses.

Final Instructions: